a unit, coupled to said first multiplexer, to form a first signal sequence with a predetermined bit length from the data words formed by said first multiplexer; and

a second multiplexer, coupled to said unit, to combine at least one first signal sequence and control and administration data for the STM-N frame.

15. (NEW) The system as claimed in claim 14, wherein said first multiplexer forms data words with a data word length of 9 bits.

16. (NEW) The system as claimed in claim 14, wherein said unit forms one of a contiguously concatenated signal and a virtually concatenated signal .

17. (NEW) A system for recovering Ethernet signals inserted into STM-N frames of synchronous digital hierarchy, comprising:

a first demultiplexer to form at least one first signal sequence;

a demapper, coupled to said first demultiplexer, to form an Ethernet signal having a reduced data rate;

a second demultiplexer, coupled to said demapper, to form data words and associated monitoring information; and

an encoder, coupled to said second demultiplexer, to form an Ethernet signal.

18. (NEW) A system for transmitting Ethernet signals, comprising:

a decoder to receive an Ethernet signal and to perform data rate reduction of the Ethernet signal in generating a decoded output;

a first multiplexer, coupled to said decoder, to form data words from the decoded output and associated monitoring information;

a unit, coupled to said first multiplexer, to form a first signal sequence with a predetermined bit length from the data words formed by said first multiplexer;

a second multiplexer, coupled to said unit, to combine at least one first signal sequence and control and administration data for an STM-N frame;

a synchronous digital hierarchy transmission system, coupled to said second multiplexer, to transmit data in the STM-N frame;

a first demultiplexer, coupled to the synchronous digital hierarchy transmission system to form the at least one first signal sequence from the STM-N frame;

a demapper, coupled to said first demultiplexer, to form a reduced data rate Ethernet signal;

a second demultiplexer, coupled to said demapper, to reform the data words and the associated monitoring information; and

an encoder, coupled to said second demultiplexer, to form a recovered Ethernet signal.

19. (NEW) The system as claimed in claim 18, further comprising:

a scrambler coupled between said first multiplexer and said mapper; and

a descrambler coupled between said first demultiplexer and said second demultiplexer.

20. (NEW) A method for inserting Ethernet signals into an STM-N frame of synchronous digital hierarchy, comprising:

reducing a data rate of the Ethernet signal;

combining data and associated monitoring information of the Ethernet signal after data rate reduction, into data words to produce a first signal sequence with a specific bit length; and

forming an STM-N signal from at least one first signal sequence and control and administration data associated with an STM-N frame.

21. (NEW) The method as claimed in claim 20, wherein the STM-N frame has a 9-bit structure, with 9 bits of user data placed synchronously in the STM-N frame.

22. (NEW) The method as claimed in claim 20, wherein the first signal sequence is broken down into four subgroups, starting with three subgroups, each beginning with a first 9-bit stuffing monitoring information item, and ending with a second stuffing monitoring information item and including at least two user data groups and blank information arranged between the first and the second stuffing monitoring information items.

23. (NEW) The method as claimed in claim 22, wherein each user data group has 144 bits bundled in a group of 16 x 9 bits.